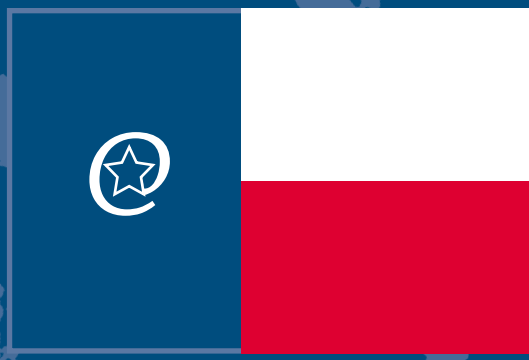
State of Texas | Department of Information Resources | Austin, Texas | November 1, 1999

texas connected.

Service at the Speed of Light



State Strategic Plan for Information Resources Management

Mission for Information Resources Management
in Texas State Government

To empower the people of Texas through effective, accessible, and open government and provision of public services by applying cost-effective, efficient, coordinated, innovative, and beneficial information resources across government.

contents

mission

To develop a plan for Information Technology in a new millennium is an extraordinary exercise. As a young girl growing up in Port Lavaca, the twenty-first century was, for me, synonymous with science fiction. I could not conceive surviving into the fantastic new world with the likes of HAL, the spiritual computer from *2001: A Space Odyssey,* to keep me company. But here I am, and the world is as remarkable as I imagined it would be.

Texans have always been known for their pioneering spirit. Today, the frontier is virtual. We must conquer cyberspace to do our bidding in our homes and businesses, in education and government. To be successful, we must respond to the challenges and opportunities presented by the new frontier.

The miracles of modern telecommunications and the Internet have made the concept of boundaries seem passé. Time and distance are moot issues in cyberspace. Although companies spend lots of money to differentiate their products from others in a virtual world, government can capitalize on this phenomenon as an opportunity to reengineer services across agencies, branches, and jurisdictions, presenting a single face of government to citizens.

The Governor's strategic plan exhorts state government to "do a few things and do them well." Technology affords us the opportunity to improve processes. In the new millennium, we will strive to improve processes that add value to citizens. We will seek out private providers for services that they can deliver better than we can.

Increased reliance on electronic infrastructure creates new challenges in protecting our historical legacy while we ensure the privacy of Texans. We have a sacred trust to protect and preserve the information resources entrusted to us by the people of Texas.

Technology is not an end in itself; it is a tool to improve the lives of Texans. We must always measure our own objectives against those of the people of this great state. Guided by these touchstones for excellence, I present the State Strategic Plan for Information Resources Management—*Texas Connected: Service at the Speed of Light.*

Carolyn Purcell
Executive Director
Department of Information Resources

Introduction

The State Strategic Plan for Information Resources Management responds to global, national, and statewide trends and issues affecting information technology use in Texas state government. The vision, goals, and objectives expressed in this plan are designed to improve information resources management within the state. They also drive state agencies' planning for information technology, and should be a major source of guidance during any agency strategic planning effort.

The previous State Strategic Plan for Information Resources Management was published in 1997. Over the past two years, Texas has made considerable progress toward realizing the goals and objectives detailed in that plan:

> The Year 2000 Project Office projects a successful conversion of all critical agency applications.

> Legislation was passed that:

- Requires prototypes and planning studies related to online government, including a common business portal
- Requires a study of the use of the Internet for citizen input
- Approves adjustments to the classification salary schedule for some information resources positions and gives latitude to agencies in providing retention bonuses for critical technology staff

> The Telecommunications Planning Group published its strategic plan, resulting in increased coordination of state agency efforts to manage telecommunication needs.

> The statewide telecommunications network, TEX-AN, is being upgraded to a cellular packet-based network that integrates voice, video, and data.

> Seventy-five percent of the state is now mapped using geographic information systems technology.

> A study of rules and legislation addressing electronic records management and retention was completed.

> Some agency data centers and disaster recovery operations have been migrated to and consolidated under the West Texas Disaster Recovery and Operations Center.

> Continuing education guidelines are being implemented for state agency Information Resources Managers.

> There is greater coordination of cross-organizational technology and business processes through such initiatives as the Texas Geographic Information Council, the Records Management Information Coordinating Council, the Judicial Committee on Information Technology, the Educational Technology Coordinating Council, and the Electronic Government Task Force.

global communications

Texas still faces many challenges regarding the successful management of statewide information resources. *Texas Connected: Service at the Speed of Light* describes a broad approach to achieving a vision of high-quality government services that are made more accessible and useful through information resources. The revised goals emphasize improved sharing of information among agencies, the reinforcement of core competencies of state agencies, and the adoption of policies to address privacy, security, and information retention. Taken together, the goals set the state's direction toward achieving the appropriate application of technology to citizens' needs over the next five years—the period covered by this plan.

The Vision for Information Resources Management frames the mission for information resources and describes the vision of how Texans will interact with government and government information technology in the future. The vision articulated here is of a future where information resources serve to make government more accessible, open, efficient, and productive for the people of Texas.

The plan's Guiding Principles center around the belief that information and information resources residing in the various agencies of state government are strategic assets that belong to the people of Texas and that must be managed as valuable resources.

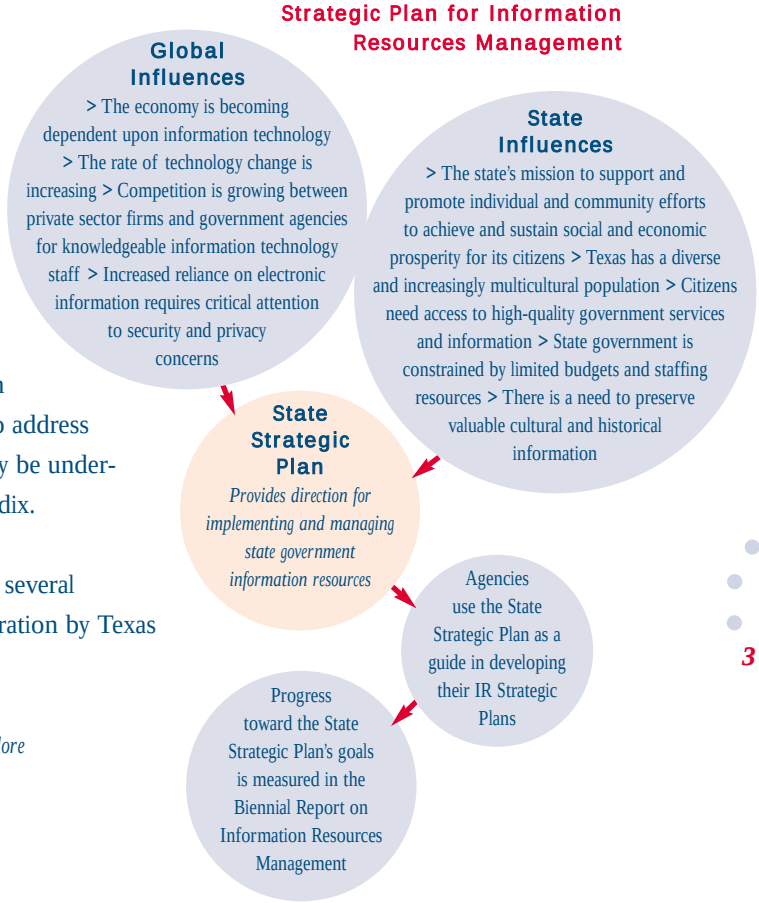
Realizing the Vision establishes goals that provide the general direction for state government's use of information resources and details the specific objectives necessary to achieve the plan's vision. The plan features several profiles throughout, describing how a variety of Texans will benefit from the vision. The profiles refer to the goals and objectives identified here.

Current Environment presents an analysis of the external and internal influences affecting state government planning for information resources management. It characterizes several major opportunities and challenges that Texas government faces in coordinating information resources across such a vast state and with such a large number of state agencies to serve. To address each challenge, one or more project initiatives may be underway. These are described more fully in the Appendix.

Finally, to achieve the vision outlined in this plan, several important Policy Issues are suggested for consideration by Texas state leadership.

Readers are encouraged to visit the State of Texas portal to explore links to online government.
http://www.state.tx.us

Influences and Outcomes of the State Strategic Plan for Information Resources Management



Vision for
Information Resources Management

The mission established for the management of information resources in Texas state government is

> *To empower the people of Texas through effective, accessible, and open government and provision of public services by applying cost-effective, efficient, coordinated, innovative, and beneficial information resources across government.*

Achievement of this mission will make the following vision a reality.

Vision

All Texans will have direct and easy access to information regarding state programs and services. They will be able to address their needs and deliver their opinions directly to elected officials and members of boards and commissions—anytime and anywhere. Government services and information will be available online, via seamless interactions with information systems. Technology will be managed effectively and efficiently to perform business functions and deliver appropriate services to citizens.

The desired future for the provision of government information and services to the people of Texas is based on these ideals.

Widespread Access to Government Services

The use of technology can enable citizen access to government services and information regardless of location, language, or physical disability. Technology also makes it possible for state employees to have timely access to accurate information that they need to serve the public.

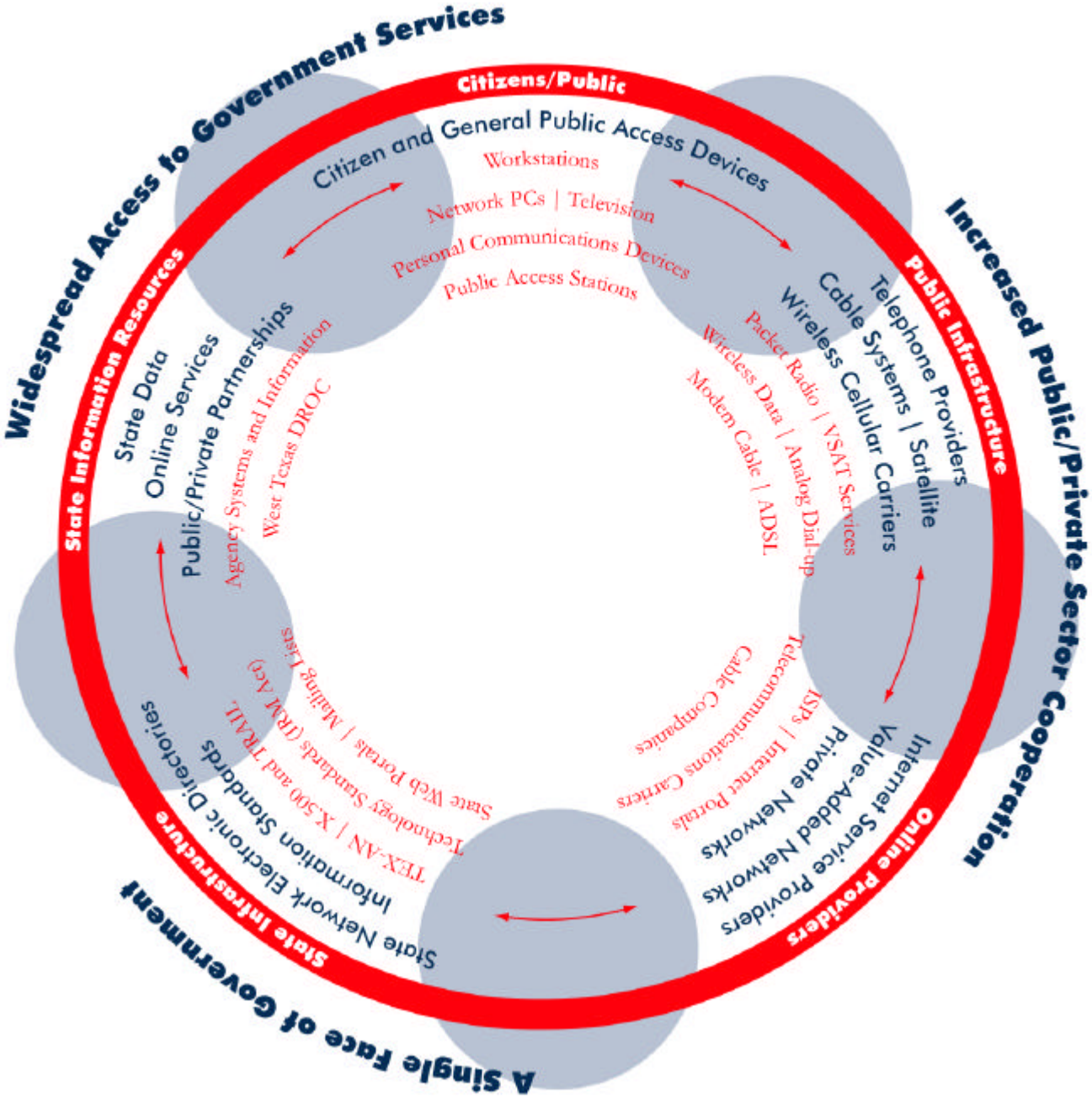
A Single Face of Government

Citizens should be able to interact with government directly through the use of technology. The elimination of location, language, and intra-governmental barriers will increase successful citizen interaction with the state. Technology also enables agencies to share business processes and information, without regard to organizational boundaries and responsibilities.

Increased Public/Private Sector Cooperation

Making the best use of the specialized expertise available in both the public and private sectors will allow state agencies to focus on their core missions and goals. Establishing strong, trusted partnerships between the two sectors will help the state to manage technology in the most efficient and cost-effective manner possible.

Delivery Framework for the Vision



Guiding Principles

These principles guided the articulation of the goals, objectives, and outcomes that have been established for statewide information resources management.

1. Information and information resources residing in the various agencies of state government are strategic assets, belonging to the people of Texas, that must be managed as valuable resources.

2. Government exists to serve the public.
   > Citizens are the ultimate reason for government and its services.
   > Government must always be accountable to the citizens of the state.
   > A commitment to efficient and effective public services underlies every activity of state government.

3. Information technology facilitates and enables superior public service. It is not an end in itself.
   > Ideally, information should be collected once and used many times.
   > Government services should be delivered on citizens' terms—irrespective of state agency boundaries.

4. Government has an obligation to protect the privacy of its citizens as a result of the use of information technology.
   > The right to privacy is basic to democratic government.
   > The free, accurate, and secure exchange of public information is fundamental to democratic government.
   > In order to maintain the public's trust, government must ensure the accuracy and integrity of government information.

profile:
A Texas State Government Employee

Fact

Communications technologies are making it possible for citizens to access government services directly from many locations, including their homes, offices, schools, and community centers, instead of being required to visit government offices in person. This change in how information is delivered to the public leads to new roles for government employees and different types of relationships with the public they serve.

Vision

For several years now, state agencies have worked hard to make their services and programs more accessible to Texas citizens via the Internet. Agency Information Resources Managers have addressed technology issues by creating partnerships with the vendor community for system operations support, allowing agencies to concentrate on addressing legislative priorities. Agency staff members collaborating on interagency programs rely on common standards and processes to integrate program information such as benefits, eligibility, locations, and funding assistance. To the average citizen, obtaining this information is a one-step process. Citizens can access the information via telephone or any Internet-enabled device, from any location: at home or in a community center, public library, or any state agency. Both agencies and citizens have quick and dependable access to online information across the state.

The changes in service delivery have provided new opportunities for state agency personnel like Mr. Raul Gonzalez, a ten-year employee at the state social services agency. Mr. Gonzalez was previously one of the agency's contacts for referral information; however, he and many other government employees have been retrained as knowledge workers. Because of the increase in Internet-based services, Mr. Gonzalez interacts less directly with the public. Instead, more of his work is behind the scenes, facilitating direct and seamless electronic access to information about agency services. Mr. Gonzalez now spends more time in the field and less time in his office. He works from other agencies and locations, accessing his agency's system with a laptop computer. He also has a direct connection from his home computer to the state's network through the Internet, giving him access to other agency systems.

Mr. Gonzalez works flexible hours that do not always fit into the traditional 8-to-5 schedule. Mr. Gonzalez and others in his work unit meet monthly to present project updates and discuss any issues or problems. Project information is posted on the team's Web site and Mr. Gonzalez participates on agency and interagency mailing lists through which he can post questions, ask for resources, and respond to others' queries. The team essentially works in a virtual office, where team members meet as needed, instead of the typical office setting.

To Realize this Vision

> The state health and human service agencies must align their information resources to address cross-agency business processes. Information on clients should be gathered once and common data should be shared by agency systems. Privacy policies should guide the sharing of information. *(Goal 1, Objective 4)*

> The TEX-AN network must be available throughout the state and accessible from remote and rural locations. Agency systems must be interoperable and use the network to exchange information. *(Goal 1, Objectives 1 and 5)*

> Agencies should focus on their core services—serving the citizens of the state. Technology development and management may be outsourced if the support and maintenance of system operations detract from service delivery. *(Goal 2, Objectives 1 and 8)*

> Agencies should evaluate how to maintain high-quality information technology infrastructures to better serve citizens—whether through outsourcing, such as the TEX-AN network, or within the agency. *(Goal 2, Objectives 2 and 3)*

> Agency systems and networks must be available 24 hours a day, seven days a week, in order to access mission-critical applications from agency offices or remote locations. *(Goal 3, Objectives 2 and 3)*

profile:
A Texas Cotton Farmer

Fact

Agriculture is the second largest industry in Texas, producing about 16% of the gross state product, and one out of every five Texans owes his or her job to the agricultural industry.

Vision

Mark is a cotton farmer in the Texas Panhandle. Like many other farmers throughout Texas, he depends on the Internet for information that helps him manage his business. He accesses monthly and quarterly weather outlook maps, pesticide information, soil services, current commodity prices, tax and insurance information, and federal grants. He is a frequent visitor to the state's Web site where he finds agricultural news, advice about conservation programs, drought trends, and market forecasts all in one place. He can interact online with other farmers around the state, participate in a statewide training program designed to alert farmers about the latest technological advances, and earn credit toward his master's degree in agriculture through an interactive, Web-based class offered by Texas A&M University.

Mark uses the Internet to access an accurate, detailed map of Texas. This free map includes soil surveys, elevation contours, and aerial imagery showing features on his farm as specific as individual trees and building structures. He can view the map three dimensionally on his personal computer to analyze runoff patterns and potential flooding problems and he can measure locations and distances on the map using the mouse on his computer. He presently uses free software to view and query this map. If he bought his own Geographic Information Systems (GIS) application, he could construct a detailed map of his farm and use the GIS to analyze interactions between physical, chemical, and crop data which could help him make better farm management decisions, resulting in optimum crop yield.

Mark also has recently become a participant in a new program offered by the state's agricultural research and extension center. The program uses global positioning satellites and other advanced wireless communications technologies to help him pinpoint and report problem areas, such as soil deficiencies and insect buildup.

To Realize this Vision

> Adequate bandwidth must be available for rural Texans to access and use government information. *(Goal 1, Objective 5)*
> Agriculture- and business-related government agencies must make their services available online and minimize the impact of government reporting requirements, so that farmers who interact with them can use the information most effectively. *(Goal 4, Objective 1)*
> State data, such as GIS data maps, must be publicly available on the Internet for citizen use. *(Goal 4, Objective 3)*

Realizing
the Vision

Four strategic goals have been established to help the state realize the vision for information resources and technology for the planning period. Objectives are outlined for each goal, along with anticipated outcomes and their target dates.

> Goal 1 addresses the relationship between Texas citizens and online government services.
> Goal 2 addresses issues related to state agency management of information resources and the need to concentrate on providing services, instead of on the technology.
> Goal 3 addresses archiving, security, and privacy issues as they relate to online government.
> Goal 4 addresses the processes by which government discerns the information needs of Texas citizens.

Goal 1

Texas state government will deliver seamless, integrated government services to citizens through coordinated, statewide information resources.

Objectives

1. State, local government, and private information resources will be interoperable.
2. Agencies will coordinate and share information.
3. Services will be delivered directly to the public via a single point of entry to online state government services.
4. Information technology will be aligned with business processes, irrespective of organizational boundaries.
5. All citizens will have access to online government services at times and locations that citizens select, taking into account special needs and social, economic, and ethnic considerations.

Outcomes

1. Agencies share electronic information to eliminate duplication. Target Dates: General Government: 2001, Regulatory: 2001, Education: 2003, Criminal Justice: 2005, Health and Human Services: 2005
2. The state establishes common information portals to government information and services. Target Date: 2001
3. The state deploys broadband access irrespective of the location. Target Date: 2003
4. Agencies provide equitable and affordable access to state-provided information and services. Target Date: 2004
5. Government accepts electronic payments and transactions for all state services. Target Date: 2003

Goal 2

Texas state government will enhance the performance of its agencies' mandates, missions, and core competencies through appropriate application of information resources.

shared information

Objectives

1. The focus will be on the government services, rather than on the technology used to provide the services.
2. Information technology operations will be "best of class," whether operated by the public or private sector.
3. There will be appropriate application of technology through the adoption and application of information resources standards and guidelines.
4. Services and information will be shared between agencies because common frameworks and processes will be in place for technology.
5. Rigorous information systems development and implementation processes will improve on-time and within-budget project performance.
6. Best practices of common processes that exemplify quality information resources management will be in place throughout state agencies. For example, agencies will apply lessons learned from Year 2000 project management and remediation efforts.
7. Information resources planning will be coordinated at all levels of government.

Outcomes

1. All agencies use private sector technology skills and resources when it is in the best interest of the state. Target Date: 2005
2. Major information resources projects are consistently completed on time and within budget. Target Date: 2002
3. Government shares best practices for information systems development. Target Date: 2001
4. Standards are developed and followed for technical interoperability (e.g., electronic commerce) and project management (e.g., internal quality assurance processes). Target Date: 2001
5. Formal processes and organization for Web management and development are incorporated into agencies. Target Date: 2002

Goal 3

Texas state government will ensure the privacy, security, and historical integrity of the information and information resources entrusted to government by the people of Texas.

Objectives

1. Data will be collected and used appropriately and securely to ensure the privacy of information managed by the state.
2. Appropriate security and authentication will be in place for information and services provided by the state.
3. The state's mission-critical information resources will be continuously available.
4. Records management processes will ensure the long-term viability of electronic records.

Outcomes

1. Agencies publish their policies on data privacy and open records on their Web sites. Target Date: 2001
2. Appropriate security measures for electronic transactions are in place and ensure continued accountability to the citizens of Texas. Target Date: 2001
3. Agencies adhere to electronic records management policies and procedures. Target Date: 2003
4. Agencies rigorously apply and test disaster recovery and business contingency plans. Target Date: 2003

Goal 4

Texas state government's acquisition, use, and management of information resources will be driven by customer needs.

Objectives

1. Processes will exist to identify and categorize end-user needs for government information.
2. Simple, comprehensive user interfaces will be available for state-provided information and services.
3. Accurate and timely state documents, data, and services will be available and linked electronically.
4. Consistent organization and indexing methods will make information search and retrieval seamless across agency boundaries.

Outcomes

1. State agency Web sites are accessible to all citizens, regardless of location, language, or physical disability (for example, Web sites comply with the Americans with Disabilities Act). Target Date: 2004
2. Public information collected and used in state information systems is easily accessible to citizens without requiring intervention from a government employee. Target Date: 2003
3. Planning and operational processes for agency Information Resources Managers include input from citizens and customers. Target Date: 2002
4. Standards for indexing, organizing, accessing, and retrieving government information are adopted by state agencies. Target Date: 2003

profile:

A Texas Family Receiving Public Assistance Benefits

Fact

The majority of Texas families with incomes below the poverty line are headed by a married couple, depend more on wages than on welfare, and often do not have health insurance. Information technology can facilitate access to job training, employment, health care and child care services needed by these Texans.

Vision

For several years now, Carmen and George, along with their two school-aged children, have been struggling to move their family out of poverty. Like many other families in Texas with very low incomes, they work in the service and retail sectors, where they earn minimum wage and where employers tend not to provide health insurance benefits. Both are hard workers with a strong desire to decrease their dependence on welfare benefits, but because they are so busy trying to make ends meet, they have little time to take advantage of or even find out about job training programs offered in their neighborhood. Nor do they know about a host of special neighborhood programs that assist families like theirs by providing child care services while parents participate in employment training and job search programs.

Recently, the family's social services caseworker switched them to a universal services benefits card. The benefits card consolidates all the social services for which the family is eligible and serves as a way to access these services. For example, the card works like an ATM card at various retail and grocery stores in town. It also doubles as a phone card that makes it possible for the family to access a centralized referral service that can put them in touch with health, child care, transportation, and other services in their neighborhood. The family is also eligible for a local cable television service through which they can enroll in job training classes, benefits programs, and resume writing services, from the television set in their home.

Thanks to a cooperative state program that links local public libraries and community centers to a consolidated state agency Web site, both Carmen and George can participate in interactive adult education at those sites, or they can enroll in courses via cable television. When they take classes at home, they don't have to worry about child care options. On a weekly basis, the couple participates in electronic meetings via cable television. They can call in by phone to ask questions about skill development programs, employers who provide on-the-job training, sources of financial assistance for education, and day care and child care support for working parents returning to school.

To Realize this Vision

> The state must have portals to common information and services, enabling residents to go to one source to locate relevant opportunities. *(Goal 1, Objective 3)*

> State agencies must continue to adopt and implement privacy policies and secure technologies in accordance with the ways in which information is gathered, shared, and used. *(Goal 3, Objective 1)*

> State Internet sites must be accessible and easy to use and navigate, in order to make it simple for citizens to find information, regardless of the agency offering the information or service. *(Goal 4, Objective 2)*

Current Environment

Texas state agencies serve many constituencies. Texas government leaders set direction for agencies, and national economic and federal government forces influence the environment in which the state operates. To understand where Texas stands in relation to achieving its vision for the future, it is necessary to look first at existing situations and boundaries that will impact the goals identified in the plan.

External Influences: Global

"The New Economy is a knowledge- and idea-based economy where the keys to job creation and higher standards of living are innovative ideas and technology embedded in services and manufactured products. It is an economy where risk, uncertainty, and constant change are the rule, rather than the exception."[1]

Many aspects of citizens' daily lives are being affected by factors such as the globalization of the U.S. economy; increasing competition as a result of deregulatory trends in several key sectors, such as telecommunications; major demographic shifts in the U.S. population; and structural transformation of the communications infrastructure via the Internet. Technological change, in particular, is altering how people are educated, the quality and means of delivering health care services, how people enjoy leisure time, and how they conduct business. It is also changing expectations about the face of government and its role in citizens' lives.

Recent and dramatic advances in electronic commerce have set in motion models of interaction and efficiency that create expectations for governments to emulate—to make government information, resources, and services more accessible and more useful to the public. Accompanying these expectations are also serious concerns about personal privacy and the equitable distribution of services and resources. Public trust in the accuracy, privacy, and integrity of government's use of information technology is essential.

Global Trends

- Preliminary employment data show that the U.S. high-tech industry employed 4.8 million workers in 1998, making it one of the nation's largest industries.[2]
- Information technology sectors are growing at double the rate of the overall economy and have jumped as a share of the economy from 6.4% in 1993 to 8.2% in 1998.[3]
- High-speed data/Internet access, including cable and digital subscriber lines, will become more widely available and affordable.[4]
- Business-to-business e-commerce will grow at an average annual rate of 99%.[5]
- IT staff and skills shortage will continue into the millennium.[6]

Internal Influences and Issues: State

The State of Texas is home to a diverse population and boasts a vibrant economy that provides a wide range of opportunities for citizens. However, aversion to risk is an institutional barrier that limits state government's progress. Likewise, the tension between the goals of federal, state, and local governments sometimes requires compromise that may detract from the original intent. The continuing success of the state in serving the public depends partly upon improvement of citizens' ability to do business with the state. To meet the demands of citizens effectively in the coming years, Texas state government is in the process of learning to conduct its day-to-day business differently. Significant technology issues complicate the task of managing information resources in state government. Despite these impediments, technology is having a positive effect on the efficient coordination of information resources across agencies and functions of government. While the state made considerable progress in the last legislative session, this strategic plan highlights the new and ongoing issues the state is working to solve in order to continue to progress.

Statewide Trends

> Between 1996 and 2006, Texas is projected to add almost 2 million new jobs, 44% of which will be found in the professional, technical, and service occupations.[7]

> Many occupations are expected to increase or decrease as a result of technological impacts such as advancements in computer technology, expansion of the usage of personal computers (PC), and the lower cost of PCs…With the computer service industry expected to grow by 46% by the year 2006, most computer occupations will grow much faster than average. Systems analysts, computer engineers, and computer support specialists are among the fastest growing computer-related occupations. Workers with skills in computer technology will continue to be needed in nearly all industries.[8]

> When asked specifically about future barriers to growth, companies indicated that the availability of a skilled work force was by far their greatest concern, followed by economic conditions, profitability, availability of capital, legislation/regulation, and taxation. In fact, an astounding 40% would consider locating or expanding outside of Texas if the work force situation continued unabated.[9]

> Between now and 2004, growth is anticipated for all the major groups of the population… Since some groups are anticipated to grow at rates faster than others, the relative composition of the state's population will change, resulting in a more culturally, socially, and economically diverse Texas.[10]

> Texas ranks second in the nation in terms of high-tech exports. It is the fastest growing "cyberstate" in the country in terms of high-tech employment growth.[11]

Following are some of the specific challenges that Texas state government will face in coordinating information resources management across state agencies. These challenges fall into two areas: how to achieve effective interaction between government and Texas residents, and how to improve internal agency information resources management to improve service delivery. Major state initiatives that address these issues are listed, and a brief description of each initiative is provided in the Appendix.

Technology Serving Texas Citizens

Telecommunications Infrastructure—Developing the Appropriate Bandwidth for Access to Government Information

State agencies and elected officials recognize that a coordinated communications infrastructure is necessary to leverage interagency endeavors, to provide services in an efficient manner, and to deliver online government services. A contract for a new statewide network infrastructure based on cellular-packet technology is in place and will be the basis for supporting current and new online initiatives for the state. The new statewide infrastructure and technology for the network will allow for greater transmission speeds than those currently available. The responsibility of developing direct connectivity and application initiatives for the infrastructure is delegated to the individual agencies. Agencies must be made aware of the potential of the infrastructure and the benefits that can be gained, while addressing cost issues to support bandwidth demands and the logistics of providing bandwidth to rural areas. Coordination in the development of online initiatives and in dissemination of successful projects is needed to ensure the success of state government's electronic initiatives.

Programs

Telecommunications Infrastructure Fund Board

Telecommunications Planning Group

Electronic Directories—Accessing Texas Government Information

Citizens and state government employees are using electronic mail and Web-enabled systems at an increasing rate. The ability to communicate through online services is hindered by the lack of good, usable electronic directories. This poses a barrier to even the most knowledgeable citizens, as they try to search through individual agency Web sites that lack directory information. Access to state government could increase exponentially if electronic state directories were available to assist the public in accessing information.

Programs

Directory Services

Texas Records and Information Locator

Privacy—Ensuring the Confidentiality of Personal Information

Privacy has become more and more of an important public concern because of the growing volume and availability of electronic data. A large amount of information collected by state agencies is available to the public as part of the open records process. Building solutions that safeguard personal data in information systems requires achieving a balance between the need for open government and the demand for efficient collection and management of information. Many state agencies do not have explicit privacy policies publicly available that describe their use of personal information and what types of open records they possess.

Programs

Records Management Interagency Coordinating Council

DIR Administrative Rules, Standards Review and Recommendation Publications

Electronic Government—Facilitating Public Interaction Online

Texas citizens and the Legislature want government entities to provide online access to information and services via the Internet. Agencies are currently providing some information online; however, most of this information is simply an electronic version of printed documents. Database access and customized services, including payment transactions, are much less prevalent activities and add complexity to an agency's technology environment. Web site development and management have not been fully incorporated into the planning process. Existing methods and processes are not always flexible enough to exploit the information-sharing capabilities of the Internet.

Programs

Public Utility Commission Interchange
Public Electronic Services On-the-Internet
Texas Electronic Government Task Force
Texas Electronic Commerce Task Force

Technology Serving State Agencies

Legacy Systems—Maintaining the Systems that Support State Activities

Multiple information systems have been developed by agencies over the years, and many of these systems and applications are aging. Agencies originally designed these legacy systems to support processes that are no longer efficient, or to satisfy requirements of internal, rather than external, customers. Legacy applications and systems often require major modifications or redesign to meet current trends in the provision of online government services. Additionally, due to individual agencies defining the information requirements for their legacy systems, there is no common standard for the data elements, which is necessary for the exchange of agency information and for government transactions with citizens and business entities.

Programs

Year 2000 Project Office
Disaster Recovery and Operations Centers
Texas Electronic Government Task Force
Architecture Framework for Information Resources Management

Year 2000—Ensuring Continued Operations and Applying Lessons Learned

The year 2000, and the associated problems with computers, networks, telephone systems, and many other basic components of a modern government infrastructure, continues to dominate the attention of many information resources organizations. Led by the state's Year 2000 Project Office, agencies continue to resolve the issues and problems associated with the year 2000. Many information resources initiatives that have been delayed or given low priority will be brought to the forefront after completion of Year 2000 remediation efforts. Project management skills and other lessons learned during the Year 2000 effort will need to be applied to new information resources initiatives.

Programs

Year 2000 Project Office
Year 2000 Working Group

Information Resources Staffing—Retaining and Recruiting Technology Personnel

Because of the dramatic growth of high-tech positions in the private sector, state agencies have difficulty attracting and retaining qualified information resources employees. Private sector entities drain the labor pool that is available to state agencies. Consequently, agencies often hire less qualified personnel, train them, and then lose them because of significant pay increases offered by the private sector. Frequently, agencies must compensate by hiring consultants at more than twice the salary level of a state employee in order to gain access to specific skill sets. The 76th Legislature provided some relief to agencies through reclassifications and retention bonuses. Additionally, the state is considering new, technology-based training strategies to reduce training costs and to retain existing skilled employees by providing personal growth opportunities.

Programs

Recruitment and Retention Initiatives

State Agency Coordinating Council and other groups are also addressing this issue

Security—Protecting the Critical Information Infrastructure

Confidence in the authenticity and accuracy of electronically transferred information continues to be a concern for state agencies. Intrusion detection and containment technologies, as well as personnel skills in this area, are imperative in today's interconnected environment. The days of "harmless" hacking for ego fulfillment no longer exist. Additionally, virus protection must be kept current to protect internal networks from external threats. Agencies spend varying amounts of time on security awareness programs, even though uninformed users are one of the greatest security risks. Security personnel at agencies also face voluminous and overwhelming information on security risks that is constantly changing. Currently, the state does not have a central unit that can receive and disseminate up-to-date alerts and information, and provide response assistance.

Programs

Electronic Government Task Force, Security Initiative

DIR Administrative Rules, Standards Review and Recommendation Publications

Business Continuity Planning—Ensuring Continuous Government Services

Business continuity planning enables organizations to continue operating under all circumstances. Since more and more state business functions are completely reliant upon technology, disaster recovery and contingency plans for information resources are crucial to business continuity planning. Alternate manual processes for many of these functions are no longer an option in times of catastrophic, disruptive events. Although contingency planning for mainframe and mid-computer environments are well documented and prevalent in agencies, attention also needs to be placed on networks and total business continuity and recovery planning.

Programs

Disaster Recovery and Operations Centers

Year 2000 Project Office

DIR Administrative Rules, Standards Review and Recommendation Publications

Shared Information—Improving Business Processes Across Agencies

Currently, agencies do not always map their business processes and data flow with all of the links to their customers, government partners (state, local, and federal), and business partners. This effort would assist both the state and its business partners in identifying shared processes that could be streamlined or eliminated to increase the efficiency of their transactions. A common technical framework does not presently exist, and is difficult to implement while maintaining existing systems. As the state moves toward online service delivery, working to identify and share existing data is necessary to provide seamless service delivery across agency boundaries.

Programs

Texas Geographic Information Council

State Agency Justice Information Coordinating Committee

Quality Assurance Initiatives

DIR Administrative Rules, Standards Review and Recommendation Publications

Educational Technology Coordinating Council

Digital Information—Ensuring Longevity and Integrity

Information created and maintained in an electronic format offers a unique usability not found in paper. It can be accessed and manipulated in different ways, enabling data collected for one purpose to be used for many others. Increased automation of state government information affects records management policies. The ease with which information is created, modified, and deleted in decentralized information systems increases the difficulty of managing and retaining it. Rapid obsolescence of information technology and the impermanence of electronic storage media puts the state at risk of losing critical government records and access to historical documents.

Programs

Records Management Interagency Coordinating Council

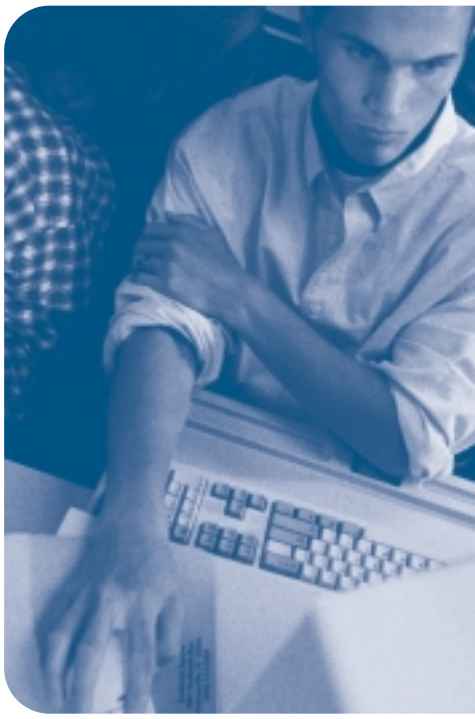
Texas Records and Information Locator

profile:

A Parent of Teenagers in the Texas Public School System

Fact

Research shows that parental involvement in schools promotes an active learning environment and contributes to children's overall academic success. Technology can help break down many existing barriers to increased parental involvement.



Vision

Janice is a concerned parent. As a single working mother of two teenage boys, she wants to be sure that they get the best education available. Before selecting her present residence, Janice reviewed school ratings she found on the state Web portal. She selected a neighborhood where information technology is widely used in the school system. Education service centers provide educational technology services and train local teachers in computer skills. Because the statewide curriculum incorporates computer use in all content areas, Janice's boys have been in a computer-based learning environment since the elementary grades. The availability of special programs and services for the deaf and hard of hearing allows her younger son to attend classes with his friends. Regional digital networks are connected to satellite broadcast links to the district, providing access to classes taught by the best teachers in the state. Additionally, two-way videoconferencing, in conjunction with a state university, allows students to earn advance college credits. Homework assignments are easier to complete since the state adopted a standard methodology for searching and retrieving library information.

Technology is also responsible for the interactive transfer of audio, video, and data between regional educational centers, local schools, and the state education agency. Parents, as well as school administrators, can use reports compiled from detailed and aggregate-level information that resides in the public education data warehouse. Janice can review accounting resource guides for her neighborhood school and district, review text material being considered for classroom use, and communicate with education professionals, all through the state portal. The school district and the local community college collaborate to broadcast school meetings and showcase student activities through the local cable TV channel and provide students the opportunity to be on both sides of the camera.

Most of the online help services are also available via telephone for those families who don't have a computer at home. Janice is fortunate to have her own computer. It was built by her younger son in his computer repair class, one of the school-to-work programs jointly developed by the district and a local computer company. With all the opportunities provided by technology, Janice feels confident that her children are being prepared to live and work in twenty-first century Texas.

To Realize this Vision

> The school district networks must be linked to the state's existing satellite broadcast using digital technology. *(Goal 1, Objective 1)*
> Information collected and aggregated about schools must be available to the public through a state education portal, but specific student information must be protected. *(Goal 3, Objective 1)*
> The state educational, library, and telecommunications infrastructures must work with schools and public libraries to adopt common standards to share information across common frameworks. *(Goal 2, Objective 7)*
> Online mechanisms must be available for parental input into the state educational processes. *(Goal 4, Objective 1)*

Policy

Issues

This section of the plan articulates those areas in which development or underdevelopment of information resources may present obstacles to achieving the state's vision. Pursuant to the Information Resources Management Act, the Department of Information Resources will develop and propose actions to address these items in the next Biennial Report on Information Resources Management.

Providing All Texans with Access to Government Services

Providing all Texans with access to government services and information will mean adapting government information dissemination processes to the diversity of the state's population and its geography. Because Texas is the second most populous state and the second largest state in terms of geography, state leadership will be challenged to meet the connectivity and information access needs of all Texans.

- Rural areas tend to be disadvantaged when it comes to providing advanced telecommunications infrastructure. Achieving broadband access in rural areas will be a critical issue in making government information available on a widespread basis in Texas.
- Significant progress has been made with regard to deployment of telecommunications resources in schools, libraries, health care institutions, and institutions of higher education, yet there is no consolidated view of where the state is now, and how much is left to be accomplished. Public sector agencies must work together to define where progress still needs to be made.
- As more information becomes available electronically, policies must be established that balance open government with security and privacy concerns of the public.
- Recognizing that other methods of information dissemination besides the Internet may be necessary to ensure effective citizen interaction with government, the state must consider delivery mechanisms that do not disadvantage any Texan for reasons of language, location, economics, or disability.
- Increasing government's electronic presence creates the potential for increasing democratic participation using information technology resources. For example, the state might choose to address policy issues to facilitate online voting via the Internet.
- Availability of electronic information does not necessarily imply its access or use by the public. The state should articulate mechanisms to increase public awareness and capacity to participate in and use electronic government information resources.
- Information that exists only in electronic form will require additional resources to preserve access and ensure longevity of historically valuable material.

Achieving a Single Face of Government

Achieving a single face of government will require not only technological solutions, but also organizational changes within and across state agencies. Institutions that manage diverse types of information may not be able to merge and integrate their data operations easily. Achieving seamless government will require significant collaborative efforts on the part of agencies. And while technology may make it possible to link to multiple-agency services, it is difficult for many agencies to make changes in work processes. Several policy issues relate to achieving a single face of government:

- As the state moves more toward an information environment, there may be a change in the role of many state government employees, from information providers to knowledge workers. This change will require new directions in training and professional development.
- As citizens become more accustomed to interacting with government online, numerous jurisdictional concerns will need to be addressed—medical licensing and certification, distance learning credits, and taxation, to mention only a few.
- As the face of government takes on a more automated presence, the potential loss of personal contact with government may become an important public service issue.
- Achieving a single face of government will require more explicit collaboration within and between state agencies and with other levels of government. Improving business processes across organizational boundaries implies breaking down institutional barriers to achieve increased collaboration at all levels of government (federal, state, county, municipal). How to achieve this collaboration will be a challenge for state agency leadership.
- A single face of government also suggests the need to work with local governments to develop standards for providing information to assure its integration with other government-based public information. It will be important to determine how the state will influence other levels of government to change policies and practices to enable effective state services that are seamless to citizens.
- Achieving a single face of government will require common standards for data elements, to enable access and retrieval of information across agency boundaries.
- It will be necessary to determine how the state will price information delivery to assure appropriate cost recovery while ensuring the availability of information to serve the public good.
- With government information increasingly available online, the state will need to ensure that other methods of information dissemination and retrieval are maintained and that electronic information does not present barriers to access.

Achieving Best Practices for Public/Private Sector Cooperation

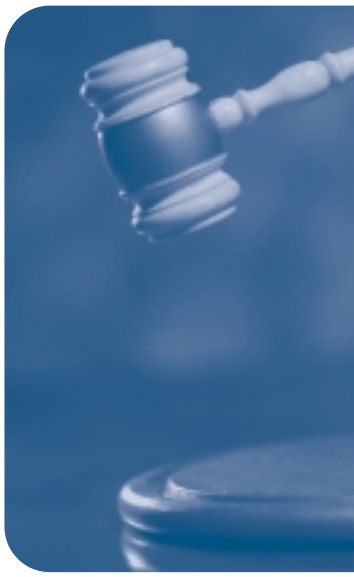
Technological innovation and change is being driven by the private sector. Increased collaboration between government and the private sector will be necessary on many levels. Government agencies will continue to outsource many technology-related activities that are best handled by private sector service providers. However, new mechanisms of accountability and performance will be needed to ensure that the private sector delivers the quality of service that government expects.

- State leadership will need to address, on a continual basis, the strategic issue of government work force recruitment and retention.
- As the state increases its reliance on private sector expertise in information technology, the state must also focus on implementing measures designed to retain state oversight and control over information technology solutions. State leadership and private industry will need to work together to establish information systems that will meet state government's needs into the future.
- Implementing centralized and outsourced services may require state leadership direction.

profile:
A Texas Judge

Fact

The criminal justice system has actively embraced new and emerging communications and information technology. Increasingly, law enforcement agencies, court systems, correctional institutions, and community groups at local and national levels are using technology to assist in crime-fighting efforts.



Vision

Judge Wilson runs an efficient courtroom. The judge, the attorneys, the defendants, and the plaintiffs have all benefited from the technology now deployed in the court system. Judge Wilson has a full caseload, but it contains fewer routine matters due to the ability of citizens to pay for minor infractions, such as traffic citations, online. Most of Judge Wilson's cases have been filed electronically; meaning that she has the case history she needs at her fingertips and she can update the case file quickly and easily.

The judge is also pleased with the improvements she has seen in her courtroom due to technology. Prosecutors have more complete information on case histories due to their ability to access national online databases to investigate prior criminal activities. Defense attorneys have more time to prepare their arguments, because they can access case status, hearing records, and other relevant judgments and opinions through an online interface. The plaintiffs and defendants are also able to access the information about their case online, which helps them keep track of the progress of the case. Court proceedings and transcripts are made available electronically after a case is resolved, making it easier for that information to be accessed and shared. Judge Wilson's caseload has increased, but she is able to process cases more quickly and easily, and has the time and ability to focus on the difficult cases that need her full attention.

To Realize this Vision

> Data standards must be in place to ensure that information in the databases is consistent and accurate. *(Goal 2, Objective 3)*
> In sharing case information, coordination is required between all entities involved, ranging from the court to state agencies to local law enforcement. *(Goal 2, Objective 4)*
> Local jurisdictions must be able to share data and information electronically with other courts. *(Goal 2, Objective 7)*
> Case filings and personal histories must be maintained securely, so that only the appropriate people have access to that information. *(Goal 3, Objective 2)*

Progress on 1997 Profiles

The previous State Strategic Plan used scenarios of the future to illustrate how realizing the state's vision for information resources would affect ordinary Texans. A brief update follows on progress toward these scenarios.

Texans without Computer Access at Home

Significant progress has been made with regard to providing access to technology in Texas communities.

> Since 1995, the Telecommunications Infrastructure Fund Board has awarded approximately $296.5 million in telecommunications grants to schools, community colleges, four-year colleges and universities, public libraries, and nonprofit health care facilities.
> Legislation was passed allowing rural telecommunications providers to be reimbursed from the Texas Universal Service Fund for installing high-speed digital circuits at discounted rates in eligible schools, libraries, universities, and for telemedicine projects. The discounts are based on the lowest rates offered to these entities, so the average cost has been lowered to approximately $260 per month—down from over $1,000 per month.
> The Texas State Library and Archives Commission is enhancing the Texas State Electronic Library effort, which enables public libraries to offer access to online information resources to users at no charge.

Law Enforcement

The law enforcement community is working to deploy advanced information and communications technologies. Some of the accomplishments in the past two years are:

> The Department of Public Safety has started work on its high-speed satellite network, which will enable law enforcement officials to transmit large-bandwidth images, including fingerprints, throughout the state.
> Law enforcement and the court system have joined forces and formed the State Agency Justice Information Coordinating Committee to plan for an integrated Texas justice system that will enable all aspects of law enforcement to share information electronically.
> A long-term reengineering effort at the Texas Department of Criminal Justice (TDCJ) has started two significant proof-of-concept projects. TDCJ is developing mobile offices for parole officers, which will provide them with laptops and enable them to access parolee information and enter data electronically. This will reduce time spent on paperwork, providing more time for parolee oversight. In addition, the Board of Pardons and Paroles will be able to access an electronic system that will reduce, from months to weeks, the period of time required to review and vote on a case.

Texas Students

The technological infrastructure of schools, colleges, and universities has been a major priority of state government agencies for the past several years.

> The Texas Education Agency has awarded $33.3 million to local education agencies as part of its Technology in Education grant program. The Telecommunications Infrastructure Fund Board objectives are listed in the Appendix.
> The Trans-Texas Videoconference Network, run by Texas A&M University, scheduled over 6,700 videoconferencing events during the last fiscal year, including academic courses and state agency meetings.
> The University of Texas System has started its TeleCampus program, offering distance education classes and full, graduate degree programs online.

Health Care Recipient

Health care delivery in Texas provides challenges due to the size of the state and the number of services available.

> Over the past three years, significant progress has been made in facilitating continuing medical education for doctors and nurses in rural areas using technologies such as videoconferencing, satellite broadcast, Web-based training, and sharing of radiology images and patient records over secure networks. Leading these efforts is a network of academic health centers in coordination with Area Health Education Center offices.
> The state, in collaboration with local health and human service information and referral services, has initiated a project that will establish a statewide network through which individuals may access needed information, either by computer or by telephone.
> Several university medical centers are developing complete, secured patient medical records so that patient information is only entered once, and can then be accessed by appropriate personnel as needed. Universities developing these systems include Texas Tech University, the University of Texas Medical Branch at Galveston, the M.D. Anderson Cancer Center, the University of Texas Southwestern Medical Center at Dallas, and the University of Texas Health Science Center at Houston.

Business Person

The business community was probably the biggest beneficiary of technological advances made within the last two years because of the rapid growth and interest in electronic commerce. Accomplishments include:

> The Texas Comptroller of Public Accounts continues to expand the types of taxes that businesses can pay online, reducing the number of forms and paper processes that occur in transactions between the state and private businesses.
> The Texas Department of Economic Development designed a Comprehensive Application Form on its Web site for businesses that need to file multiple permits in order to do business in the state.
> The Electronic State Business Daily provides free online access to all state agency bids that total over $25,000.
> The Electronic Government Task Force was established to pilot an electronic business project and identify barriers to doing business with government via the Internet.

Appendix

This appendix contains brief descriptions of various programs that are underway to address some of the internal issues described in the Current Environment section.

Architecture Framework for Information Resources Management

The Department of Information Resources published the first draft of the Architecture Framework for Information Resources Management (AFIRM) in 1994. AFIRM is an enterprise-level guide for developing architectures that satisfy specific functional requirements. It provides the services, standards, design concepts, components, and configurations that can be used to develop architectures that meet specific agency requirements. AFIRM will be updated during the 2000–2001 biennium and will be submitted to the agencies as guidelines for their information resources architecture.

AFIRM is independent of data- and agency-specific applications. If forms the foundation for introducing and promoting interoperability, portability, and scalability of state information systems. Where two information systems must work together, their architects and designers should use AFIRM as the basis for developing a common target architecture to which both systems can migrate and evolve. Over time, interoperability among all systems will increase, giving users improved services needed to achieve common functional objectives.
http://www.dir.state.tx.us/TIC/dir_info/dirpubs.htm

Directory Services

Standards for directory services have been defined by the International Organization for Standardization in the X.500 Directory Service specifications, and by the Internet Engineering Task Force in the Lightweight Directory Access Protocol (LDAP). In fiscal 2000, DIR will implement an X.500 directory server to assist agencies in building internal directory services. The DIR server will act as the top-level hierarchical server for the state. DIR will evaluate both X.500-based and LDAP-based directory services as a means to improve access to government information and services. The Railroad Commission of Texas and the Office of the Comptroller are collaborating with DIR in implementing agency-level directory servers as a test benchmark for the DIR server.

DIR Administrative Rules, Standards Review and Recommendation Publications

The Department of Information Resources issues Standards Review and Recommendation Publications to be used as guidance by Texas state agencies and institutions of higher education. DIR does not use the publications to mandate any particular action; however, where specific standards are identified as critical to the development and deployment of a statewide infrastructure, the standards are adopted by administrative rule.

Rules have been published in the following areas:

- Statewide Network Standards
- Building and Campus Wiring Standards
- Video Conferencing Standards
- The Year 2000 Date Standard and Readiness Criteria Standards
- Digital Signatures and Certificate Authorities

New and revised rules are planned in the following areas:

> Web Design Standards addressing security, privacy, and accessibility
> Digital Signatures and Certificate Authorities

Guidelines have been published in the following areas:

> IP Address Assignment
> Personal Use of E-Mail and Internet Services
> Sale or Transfer of Computers and Software
> Internet Domain Names for State Agencies
> Directory and Locator Services
> Personal Naming Convention for E-Mail and Legislative Requirements for Agencies to Establish and Publish E-Mail Addresses
> World Wide Web Design and Coding Guidelines
> E-Mail and Document Interchange Guidelines

New and revised guidelines are planned in the following areas:

> Unsolicited Bulk E-Mail (UBE)/Spam and Spoofing
> World Wide Web Design and Coding Guidelines (addition of security, privacy, and accessibility)
> Video and Audio Broadcasts over the Internet

http://www.sos.state.tx.us/tac/index.html
http://www.state.tx.us/Standards/

Disaster Recovery and Operations Centers

The Department of Information Resources is responsible for the management of two disaster recovery and operations centers. The Austin Disaster Recovery Operations Center (ADROC), located at 1001 West North Loop in Austin, is a cold-site recovery facility available for use by state agencies and universities in the event of a disaster. It has 10,000 vacant square feet and includes basic physical and environmental features required for data processing and telecommunications. DIR is currently revising the policies and guidelines for the use and operation of this facility.

Additionally, the 73rd Texas Legislature in 1993 directed DIR to enter into a partnership with Angelo State University (ASU) to establish a state disaster recovery facility and operations data center on the ASU campus in San Angelo.12 The partnership has resulted in the planning, design, construction, and implementation of a joint-use facility housing new classrooms, microcomputer labs, and faculty offices for the Math and Computer Science Departments of ASU, and a disaster recovery and operations center for the State of Texas.

The West Texas Disaster Recovery and Operations Center (WTDROC) offers the following services to support the largest possible subsets of state agency and university data center operations:

- Renders a seamless suite of disaster recovery services with other state resources available at the cold-site/remote testing facility (ADROC) in Austin
- Provides data center operations for state agencies and universities
- Explores other productive uses of benefit to the community and the state

Both facilities are self-supporting and are operated by Northrop Grumman Technical Services through a contract managed by DIR. Operations service delivery began in WTDROC on January 2, 1997. Currently, 43 agencies use the ADROC and WTDROC facilities for their computer operations. Approximately 24 agencies have contracted to use the facilities for disaster recovery. Agencies currently using data center services at WTDROC include Angelo State University, Texas Workforce Commission, Texas Workers Compensation Commission, Texas Department of Mental Health and Mental Retardation, Texas Education Agency, and Texas Parks and Wildlife Commission.
http://www.dir.state.tx.us/busops/contract_services/wtdroc.htm

Educational Technology Coordinating Council

The 76th Texas Legislature directed the Texas Education Agency to convene an Educational Technology Coordinating Council (ETCC) to ensure the cooperation and coordination of the state's efforts to implement educational technology initiatives.[13] The ETCC is also charged with developing a master plan for educational technology. Special attention will be given to the coordination of teacher and librarian training. Participants include:

- Texas Education Agency
- Department of Information Resources
- General Services Commission
- Telecommunications Infrastructure Fund Board
- State Board for Educator Certification
- Higher Education Coordinating Board
- Colleges of Education from the various state universities

Electronic Commerce Task Force

The 75th Texas Legislature directed the General Services Commission (GSC) to establish and operate an electronic procurement marketplace, including an electronic commerce network.[14] GSC formed an Electronic Commerce Task Force to develop a statewide strategy for electronic commerce. A pilot implementation for an online procurement system is scheduled for the 2000–2001 biennium.

Task Force Members

General Services Commission
Office of the Governor
Comptroller of Public Accounts
Legislative Budget Board
Texas Department of Transportation
Department of Information Resources
Texas Department of Economic Development
Texas Department of Health
Texas A&M University System
University of Texas System

http://www.gsc.state.tx.us/elec_comm/ectf.html

Electronic Government Task Force

The 76th Legislature created the Electronic Government Task Force to assess the current and future feasibility of conducting government transactions via the Internet.[15] The task force is concentrating on the delivery and receipt of filings and documentation to state-regulated entities and online payments for fees, licenses, etc. A demonstration project will be implemented to assess the feasibility and to establish a framework for other electronic government initiatives. The information gathered from a survey of Texas state agencies, from a survey of other state projects, and from the demonstration project, will determine opportunities and challenges for electronic government in Texas. The task force will deliver a report with the findings and recommendations to the 77th Texas Legislature.

Task Force Members

Office of the Secretary of State
Office of the Comptroller of Public Accounts
Texas Department of Economic Development
General Services Commission
Texas Natural Resource Conservation Commission
Texas Department of Insurance
Texas Public Utility Commission
Department of Information Resources
Representatives of local governments appointed by the Governor
Representatives of businesses regulated by a state agency or local government, appointed by the Governor
Public members appointed by the Governor

Security Initiative

As part of the e-government initiative, the state will intensify efforts to address security, authentication, and prevention of network intrusion. DIR is completing security guidelines for agency use of the Internet and online application access. DIR will also coordinate the implementation of a State of Texas Security Response Team, similar to the national CERT (Computer Emergency Response Team) program. The Security Response Team will coordinate the state's response to network intrusions and virus warnings. The need for a contract for technical support services on a statewide basis is also being evaluated.

http://www.dir.state.tx.us/egov

Public Electronic Services On-the-Internet

The PESO (Public Electronic Services On-the-Internet) Working Group was established in 1999 to provide a forum for addressing policy and technology issues related to improving access to government information and services via the Internet or state agency networks. Membership is open to all state agencies and universities. PESO seeks to provide seamless access to online government information, and addresses any area of Web site design or management that is of concern to its membership. Meetings are held monthly and have covered such topics as privacy policies, designing Web sites for visually-impaired users, and connecting databases to the Internet. Current activities include developing Web site standards and classifying Web-related job activities for state agencies.
http://www.state.tx.us/Standards/peso.htm

Public Utility Commission Interchange

The Public Utility Commission (PUC) continues to evaluate the filing and retrieval of PUC documents via the Internet with the PUC Interchange, an electronic access system. This service went online in March of 1997. The Interchange provides access to all filings, open meeting transcripts, tariffs, and other vital information, 24 hours a day, 365 days a year. It captures approximately 50,000 pages of filings a month. The project was approved by the Texas Legislature in 1995 and is funded by users of the system. Payment for the documents may be made using VISA, MasterCard, or American Express through a secured transaction system. Custom software, available via the PUC Web site or on diskette from Central Records, makes it easy to file documents electronically. The Interchange has not replaced paper altogether, but it has greatly reduced the number of copies required while providing other benefits, such as saving time, for system users. Information retrieved overnight from the PUC Web site is forwarded through computer networks and available to the user by the next morning.
http://www.puc.state.tx.us/interchange/index.cfm

Quality Assurance Initiatives

Quality Assurance Team

The Quality Assurance Team (QAT), established in 1993, has been continued by rider in the General Appropriations Act passed by the 76th Legislature.16 The QAT uses quality assurance review, risk analysis, and project monitoring to ensure that major information resources projects within state government are successful. A major information resources project is defined by law as any information resources technology project identified in an agency operating plan whose development costs are more than $1 million and either requires one year or more to reach operational status, involves more than one agency or government entity, or materially alters work methods of agency personnel and/or the delivery of services to agency clients.

The QAT consists of representatives from the State Auditor's Office and the Legislative Budget Board (LBB). The representatives from the LBB review and analyze information provided by the agencies, provide technical assistance to agencies regarding quality assurance, and participate in projects as deemed necessary by the QAT. The representatives from the State Auditor's Office provide audit review of the projects and information provided by the agencies. The QAT may request the assistance of the LBB budget analysts and the Comptroller's Office regarding the accuracy of project expenditures and compliance with the General Appropriations Act.
http://www.dir.state.tx.us/oversight/qat/

Internal Quality Assurance Guidelines

The Department of Information Resources is developing guidelines and procedures to assist state agencies in implementing internal quality assurance processes to promote successful projects. DIR will provide technical assistance and review the internal quality assurance procedures implemented in state agencies. DIR will complete the guidelines in fiscal 2000 and report to the 77th Legislature on the progress of the agencies in implementing these procedures.

Records Management Interagency Coordinating Council

The Records Management Interagency Coordinating Council (RMICC) was created by the 75th Legislature to study challenges that electronic records pose in the management of and public access to state government information.[17] Additionally, RMICC was charged with improving public access to government information by categorizing agency programs and telephone numbers by subject matter. RMICC is composed of officers or the officers' designees of:

> Comptroller of Public Accounts
> Texas State Library and Archives Commission
> Department of Information Resources
> Office of the Attorney General
> Office of the State Auditor (non-voting)
> General Services Commission
> Office of the Secretary of State

As a result of the studies, RMICC made a number of recommendations in its Biennial Report to the Governor and 76th Legislature.[18] RMICC will continue working with the General Services Commission to update telephone directories with current agency contact information and, additionally, look at placing the same information on the Internet with links to the TRAIL index (see Texas Records and Information Locator). The council will review proposed changes in the electronic records rules, encourage the publication of the Functional Requirements for Managing Electronic Records as guidelines for state agencies and universities, and pursue collaborative grant opportunities to fund further research into the preservation of historically valuable information in electronic form. These efforts will improve citizen access to government information and ensure the integrity and viability of state records.

Recruitment and Retention Initiatives

In response to statewide concerns regarding the recruitment and retention of qualified information resources staff, various agency efforts have been initiated. Following is a sample of these programs:

> The University of Texas at Austin has developed a successful Systems Analyst Apprenticeship program, which trains a non-technical staff member or newly hired employee to be a fully qualified systems analyst within 24 months. The program begins with an analytical aptitude test and includes a six-month probationary period. This program has served as a model to several other agencies and universities.
> The Department of Human Services, faced with a 23% turnover in Information Systems staff, sought ways to reduce it by utilizing the following recruitment strategies:
  - Attempting to keep salaries within 15% of market prices through adjustments and bonuses
  - Emphasizing non-financial benefits of working for the state

- Recruiting from less traditional employment pools, such as retirees, former stay-at-home parents, and non-college-bound students
- Offering attractive job perks such as telecommuting, flexible hours, part-time employment, on-site college credit classes, and educational opportunities
- Creating an apprenticeship program for training non-technical staff to be programmers

State Agency Justice Information Coordinating Committee

Several entities are working together on behalf of state and local government to develop a coordinated plan to upgrade the information infrastructure to improve the administration of justice in Texas. The entities include the Department of Public Safety (DPS), Office of Court Administration (OCA), Criminal Justice Policy Council, Office of the Attorney General Child Support Division, Texas Department of Criminal Justice, Texas Juvenile Probation Commission, and Texas Youth Commission. The agencies are coordinating resources, knowledge, and investments to enhance the sharing of information. The Legislature has funded various initiatives to meet the information needs of these agencies, including:

> DPS has contracted for satellite network services to serve the approximately 1,500-site Texas Law Enforcement Telecommunications System. The upgraded system will meet the FBI National Crime Information Center requirements and enhance support of local law enforcement data communications needs. The satellite network will be installed in fiscal 2000.

> OCA serves as staff to the Judicial Committee on Information Technology (JCIT), which serves the judges, clerks, prosecutors, court administrators, and staff of the sixteen appellate courts, district courts, county courts, justice courts, and municipal courts. JCIT was funded at approximately $9.7 million for the 2000–2001 biennium to continue building a court infrastructure for the exchange of data, documents, and court e-mail, and for Internet access, workstations, and other networking components. The funding will include the development of a statewide data system to manage collection and dissemination of case-level information among the 3,200 Texas courts and other branches of government.

These enhancements provide the groundwork for collaboration between the agencies in building an electronic law enforcement mesh. This mesh includes the exchange of information between all component agencies, real-time database updates, and interagency query capabilities, among other applications. Further efforts, including funding and legislation, are required to complete the initiatives.

Strategic Mapping Program

The Texas Geographic Information Council's 1994 long-range plan established a goal to develop a key set of digital geographic data layers for statewide mapping purposes. This initiative led to the creation of the Texas Strategic Mapping Program, or StratMap.

Texas lacks accurate, detailed data sets, at a statewide level, for key map layers. StratMap is creating seven digital geographic data (mapping) layers for:

> Digital Elevation Models
> Digital Orthoimagery (scanned aerial photography)
> Hydrography (water features)
> Hypsography (contoured elevation data)
> Political Boundaries
> Soils
> Transportation

StratMap's first effort is the Texas Orthoimagery Program (TOP). TOP is managed by DIR for the purpose of developing color infrared DOQs (digital orthophoto quarter-quadrangles) statewide. An orthophoto is essentially a rectified aerial photograph that is scanned into a format readable by computers for the purpose of serving as a base map for electronic mapping software known as geographic information systems. Funding for TOP is based on an innovative partnership mechanism, whereby monies from federal, state, local government, and private sector sources are pooled to leverage funds for the mutual gain of participants.

The Texas Water Development Board (TWBD) manages the overall StratMap program. The project leverages dollars from the federal, state, and local government participants. When the TWDB completes Phase One of StratMap in fiscal 2001, the digital map layers will serve as the foundation for future enhancements to the state's electronic mapping systems. All StratMap data layers will be stored at the Texas Natural Resources Information System as a public resource.
http://www.tgic.state.tx.us

Telecommunications Infrastructure Fund Board

The Texas Telecommunications Act enacted by the 74th Legislature established the Telecommunications Infrastructure Fund Board (TIFB).[19] The TIFB administers the disbursement of approximately $1.5 billion in grants and loans to eligible schools, libraries, universities, and telemedicine projects. The TIFB seeks to achieve the following objectives in awarding the grants:

> Drive advanced telecommunications infrastructure into rural, remote, or underserved regions of Texas.
> Take advantage of distance learning opportunities in rural and urban school districts with a disproportionate number of at-risk youths or with high dropout rates.
> Increase advanced telecommunications services for public access.
> Encourage increased collaboration and information sharing with respect to telecommunications technologies.
> Encourage quality- and standards-based technology training.
> Provide a clearinghouse of best practices for local and regional networks for Texas citizens.

Since its creation in 1995, the TIFB has awarded approximately $296.5 million in telecommunications grants to 1,061 school districts and charter schools, 57 community colleges, 67 four-year colleges and universities, 592 public libraries and branches, and 444 public and nonprofit health care facilities.
http://www.tifb.state.tx.us

Telecommunications Planning Group

The 76th Legislature continued and enhanced the functions of the Telecommunications Planning Group (TPG).20 The TPG is represented by staff from the Office of the Comptroller of Public Accounts, Department of Information Resources, and General Services Commission (GSC). The TPG completed the statewide strategic telecommunications plan, including issues and recommendations for the state infrastructure, and delivered it to the Legislature in October 1998. GSC has addressed a major portion of the plan by completing the award of a five-year contract to AT&T Solutions for implementing the statewide network, TEX-AN 2000, in calendar year 2000.
http://www.state.tx.us/TPG/

Texas Geographic Information Council

The Texas Geographic Information Council (TGIC) coordinates the use of Geographic Information Systems (GIS) technology in Texas. GIS makes it possible to spatially view, query, and analyze many of the state's databases, improving users' ability to understand the data and make informed decisions. TGIC is composed of executive-level representatives of thirty-three state agencies, five state-supported universities, and five statewide associations that use GIS to help accomplish their missions.

TGIC and its predecessor organizations have been a model for intergovernmental partnership and coordination in the area of information technology. A set of technical standards and guidelines for GIS, adopted in 1992 by DIR, are currently being revised and expanded. These standards ensure that expensive GIS datasets developed by individual agencies will be sharable and usable by other agencies and the public. Efforts by TGIC and its member agencies led to the creation of the Texas Strategic Mapping Program in 1997. This program is producing the first statewide digital map of Texas (see Strategic Mapping Program).

Recently the federal government took two actions, which strongly endorsed the state's approach to geographic information systems coordination. The U.S. Geological Survey established a permanent Texas Mapping Liaison in Austin. Additionally, a number of federal agencies formed the Texas Federal GIS Workgroup with a formal tie to TGIC.
http://www.tgic.state.tx.us

Texas Records and Information Locator

The Texas State Library and Archives Commission was directed to establish a system to allow access to state publications in electronic format.[21] The Texas Records and Information Locator (TRAIL) was developed as an electronic guide to the online resources of Texas state agencies for this purpose. Citizens and state agencies can use TRAIL to locate documents across the various agency Web sites.

State agencies are required to report to the Texas State Library and Archives Commission each state publication made available publicly on the Internet.22 Changes to existing publications that alter a publication's Web address, title, scope, or accessibility must also be reported. Agencies will be able to input specified data into TRAIL directly, using Web-enabled forms. TRAIL then indexes the publications and provides a searchable interface to all state agency Web servers. By integrating the retrieval

of full-text electronic publications with record location finding aids for paper publications, TRAIL functions as a virtual card catalog and desktop library to the material published by Texas state agencies and state-supported colleges and universities.
http://link.tsl.state.tx.us/trail/

Year 2000 Project Office

The 75th Legislature directed DIR to enter into a contract to assess and report the impact of the Year 2000 to the State of Texas.[23] As a result, an additional $110 million was appropriated to assist state agencies in remediating computer systems. To coordinate this statewide effort, the Year 2000 Project Office was established within DIR. The mission of the Project Office is to effectively apply and facilitate the use of resources to assist agencies and institutions of higher education in achieving Year 2000 operability. The roles and responsibilities of the Project Office include the monitoring and oversight of Year 2000 efforts, status reporting to the Legislature, and providing awareness statewide.

The goal of the state is to ensure that its mission-critical business functions are operable and able to continue on January 1, 2000, and beyond. As of this publication, the State of Texas is 98.8% implemented.

Monitoring and Oversight

- Developed a Web-based reporting tool and guidelines for agencies and universities to report project status. Developed contingency planning guidelines for all mission-critical systems not remediated by December 31, 1998, as required by the Legislature. Performed four levels of risk assesment with established risk criteria.
- Developed guidelines for Business Impact Analysis and continuity planning. All agencies and universities completed business impact analyses for each goal/strategy in the fiscal 2000 Legislative Appropriations Request.
- Developed guidelines and a reporting tool for embedded systems. Established a task force to develop contingency planning guidelines for embedded systems, and a steering committee to provide a level of oversight. As of this publication, 112,000 devices have been identified; 101,000 have been corrected and 11,000 remain to be corrected. Contingency plans are in place for all critical systems that have not been corrected.
- Established a task force and developed guidelines for contingency planning for critical equipment.
- Established a task force and developed guidelines to assist agencies and universities in developing crossover plans. These efforts are still in progress.
- Established an interface task force, and developed guidelines and a Web-based reporting tool. Worked in conjuction with the National Association for State Information Resource Executives to capture status on mission-critical federal interfaces.

Status Reporting to Legislature

Delivered consolidated "state of the state" status reports to the Legislature on Year 2000 efforts in January 1998, March 1998, May 1998, November 1998, May 1999, and October 1999.

Statewide Awareness

- Provided local, national, and international presentations on Year 2000 efforts in Texas.
- Worked with the Governor's Office to publish a guidebook to assist county and city government on the Year 2000 issue.

Year 2000 Working Group

Held monthly meetings with agencies and universities to allow for the exchange of information on current Year 2000 issues.

Continuing Efforts

- Coordinating crossover planning with mission-critical agencies to ensure that these plans are complete.
- Developing a Best Practices report to identify lessons learned during Year 2000 activities that can apply to future technology projects.
- Coordinating federal reporting with the Division of Emergency Management within the Department of Public Safety on statewide infrastructure issues during the century transition period.
- Continuing to monitor agencies/universities as they complete their Year 2000 efforts.
- Coordinating nationally on a monthly basis with other states and the federal government by teleconference.
- Working with the Division of Emergency Management to address emergency preparedness in Texas, including public information about Y2K preparedness.

http://www.dir.state.tx.us/y2k

Notes

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14. TEX. GOV'T. CODE ANN. § 2177.002 (Vernon 1999).
15. Act of June 18, 1999, 76th Leg., Texas Session Laws (Vernon) (to be codified as an amendment to TEX. GOV'T. CODE ANN. § 2054.062).
16. General Appropriations Act, 76th Leg., R. S., ch. 1589, art. IX, § 9-6.22, 1999 Tex. Gen. Laws IX-46.
17. TEX. GOV'T. CODE ANN. § 441.203 (Vernon 1998).
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19. TEX. UTILITIES CODE ANN. § 57.044 (Vernon 1999).
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Acknowledgements

The Department of Information Resources selected an advisory group consisting of state agency and industry representatives to assist in the development of this strategic plan. The advisory committee helped DIR in articulating the mission and vision for the management of information resources in Texas state government, and in establishing goals and objectives for realizing the vision. DIR appreciates the dedication and efforts of everyone who participated in developing the strategic plan.

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